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ABSTRACT

The gap between researchers or theorists and practitioners in the field of educational psychology can be bridged through the formation of a middle group of professionals concerned with knowledge utilization. The paper justifies this new direction by discussing the lack of communication and even frequent antagonism between these two major fields. This lack of communication not only contributes to the low-prestige image of the knowledge utilization field, but also creates confusion concerning the roles of those professionals in both fields. To bridge the gap, a group of "architect design specialists" could fulfill the need for a new direction in educational psychology. The term "architect" refers to one who creatively designs answers to practical problems based upon scientific information. Advantages to a new direction would include a more systematic classifying system, better informed teachers and personnel and the creation of a new field in educational psychology for architect-design specialists. Two charts map out the *uidelines for the use of psychology information in subject matter areas. (KC)

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The Educational Psychologist as Architect

Symposium: IMPLEMENTING THE CALL FOR NEW DIRECTIONS IN EDUCATIONAL PSYCHOLOGY

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New York Hilton
New York, New York
April 5, 1977

INTRODUCTION

WHAT NEW DIRECTION, AND WHY IS IT PROPOSED?

Architect-Design Processes, and "Knowledge Utilization" vs. "Knowledge Production" "Bridge" Between Researchers/Theorists and "Service Delivery" Educ. Psychologists

ISSUES, PROBLEMS, AND PROGRESS

1. Knowledge Production/ Knowledge Utilization
2. Low Prestige for Knowledge Utilization
3. Clarity Concerning KP vs. KU roles and functions
4. Information/ Information/ Information
5. Representation and Modification of Tentative "Solutions"
   Variance manipulation rather than variable manipulation
   Representation of solutions even before we know if and how they work

SOME ADVANTAGES OF THIS "NEW DIRECTION"

1. More Systematic Design Strategies
2. Humanistic and Empirically Sound Educational Innovations
3. Outcomes Broadly Conceived
4. Processes as Well As Products (or, results)
5. Better understanding of "Information Flow" among designers/ practioners/ researchers
6. Reduce friction between researchers and practioners
7. Enable teachers and other school personnel to be better informed and discriminating "Consumers" of Educational Psychology Information
8. Potential new job opportunities for Educational Psychologists in other sectors concerned with knowledge utilization issues and Problems

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The Educational Psychologist as Architect
SYMPOSIUM: Implementing the Call for New Directions in Educational Psychology

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The diversity of 'new directions' evident in this Symposium lends support to the belief that there is strength--rather than weakness-- in having contrasting views about educational psychology. Conceptions of educational psychology differ not only with regard to the educational problem or area where psychology information might be relevant but also with regard to the 'appropriate' functions and contributions of educational psychologists.

It is the latter--the 'appropriate' functions and contributions of educational psychologists--which is the focus of my paper. I wish to call your attention to certain terms--"appropriate," "functions," "contributions," and "architect". Although I will not use these terms in any unusual way, I will contend that they are particularly important for anyone who wishes to pursue successfully the "new direction" on which I focus in this paper.

Given our usual time limitations, it seems best for me to deal with three main topics: (1) the "new direction" and why I focus on it here; (2) some problems or issues one encounters in pursuing this direction in educational psychology; and (3) some illustrative advantages which individual persons and our field in toto can gain from this conception of educational psychology.

The title of my paper is "The Educational Psychologist as Architect." Rather than limit the meaning of "architect" to the building construction industry, I'm using the common language general definition of architect as one who designs, devises, creates, or plans something. The resulting "something" can, of course, consist of an object, such as a building: but architects also are concerned with processes and experiences.

I deliberately chose "architect" rather than "engineer" for several reasons. Both terms imply a use of scientific information along with judgments and practical problem characteristics. But many people seem to consider an "architect" to be "more creative" and "less mechanistic" than an "engineer", even though such beliefs may not be supported by facts. Also architects have devised certain interesting and techiniques.

The general area with which I'm concerned has been identified by several "labels" over the years; currently "scientific knowledge utilization," "new knowledge utilization," "new knowledge utilization", "technology transfer," and simply "knowledge utilization" can be found in the literature. For brevity, I'll talk about "knowledge utilization", with the understanding that other terms sometimes are used.

I'll elaborate on this in a few minutes; but I'll briefly note here that "knowledge utilization" is sufficiently different from our more traditional research based "knowledge production" or "knowledge acquistion" that it constitutes a new and different direction for educational psychologists.

Over the decades, various roles and funtions have been identified for educational psychologists, including--researcher, psychometrician theorist, test administrator and interoreter, human development specialist, sensitivity

trainer, theorist on various educational and psychological topics, instrumentation and educational technology expert, etc. We can justifiably claim that "psycholog information" has been "applied" in education at least since the early twentieth century. But the nature of these "applications" and the manner in which they have been accomplished--with whatever degree of success one might claim--suggest that we have not yet devised satisfactory, systematic means for "knowledge utilization".

Essentially we've had two major groups in educational psychology--One group has primarily been interested in conducting studies, some dealing with psychology topics for which schools serve as laboratories and some dealing with practical problems of special interest to educators. Another group has primarily been interested in providing services to students, teachers or other school personnel--common examples are school psychologists and sensitivity trainers.

There has been continuing controversy about the extent to which research findings both "applied" and " basic "--really have been improving the quality of education. Typically debates lead to polarization of views, somewhat resembling the age-old "town vs. gown" controversies: the more practical-oriented educational psychologists identify with the constraints and existing practices of the real-life situation, while the researchers suggest that sounder research methodology or theoretical concepualization are needed for the practical problem. Both the researchers and the service-delivery educational psychologist seem to agree that research information somehow should improve the quality of our education today but numerous problems are encountered in trying to accomplish this.

"Knowledge utilization" has posed problems not only throughout applied psychology but almost wherever science and technology have been considered

for resolving society's problems. For example, Bruner has reminded us that any educational innovation requires vast development and engineering, Chapanis has contended that experimental psychology research stratagies are not sufficient for solving practical problems in industrial psychology, Lanyon and Broskowski have advocated that some--not all-- clinical psychologists should devise design-development roles and strategies. Milsum has identified parallel problems in using physical and biological science information. Dolly and Creighton edited a monograph in which similar knowledge utilization problems have been encountered in such areas as electrical power transmission distribution, military weapons development, the U. S. Forest Service, etc.

Many contemporary authors have observed that our society in general as well as various governmental officials have been raising serious questions about the manner and extent to which "scientific information" can really be expected to solve society's problems. With regard to education, there is growing awareness that we need to recognize ways in which research can and can not provide useful answers to practical problems. For example, Elkind (1976) observed: "A year as headmaster of a small school suggested some practical and some conceptual issues regarding child development in educational settings...(p. 49)....Although I have written about child development and education elsewhere...these discussions were not informed by the Mt. Hope experience. What that experience brought embarrassingly to my awareness was the glibness with which I had previously dealt with issues of curriculum, of learning and of child development as the science of education (p. 54). In a recent interview (March, 1977, Phi Delta Kappan), Ralph Tyler commented: "The greatest contribution the university can make is to figure out how systematic, tested knowledge can improve education--and how some people can be educated to apply it (p. 546)."

Figure II-1 Organization of Research and Other Information Relevant to Practical Situations

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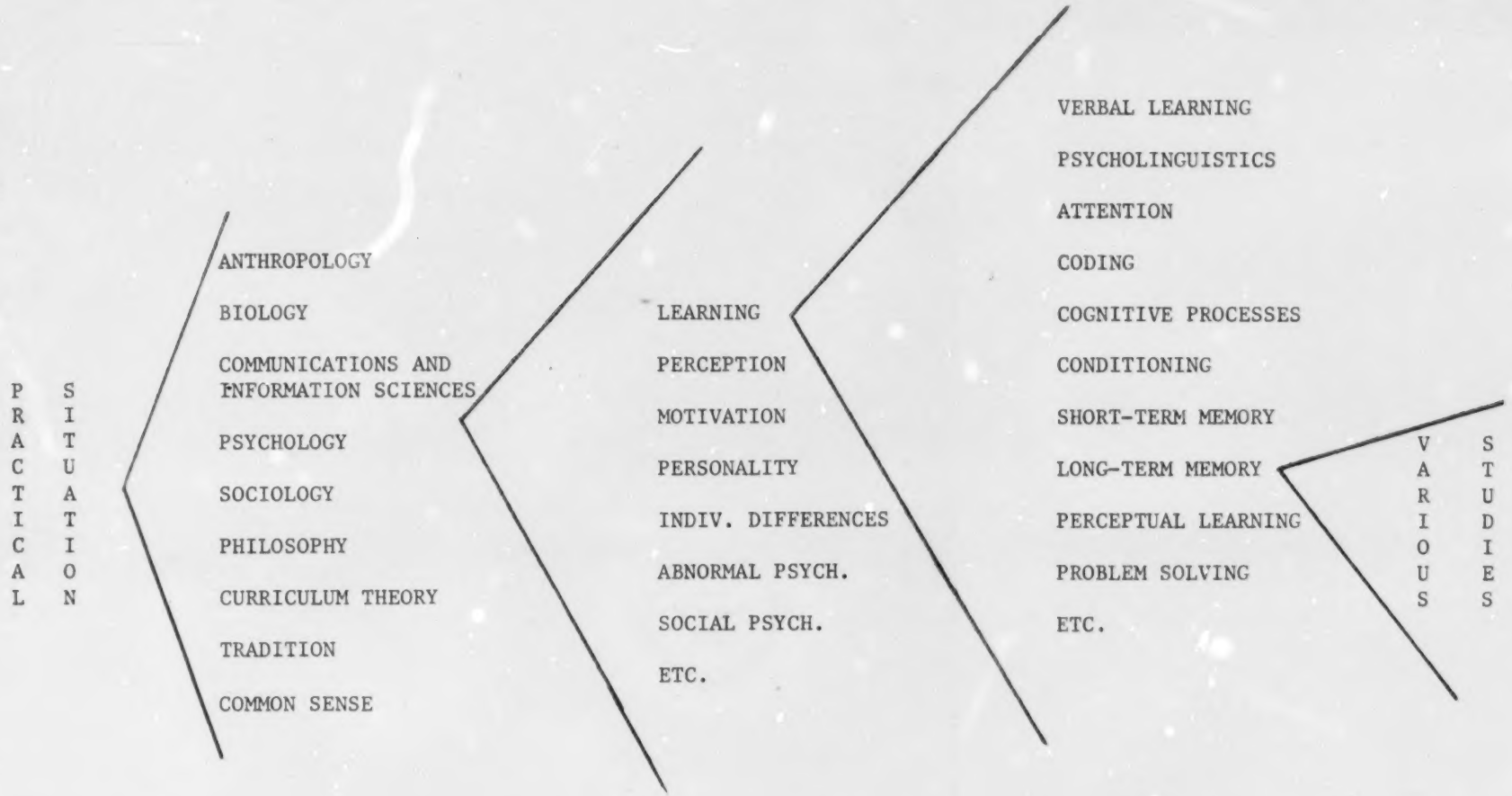


I'm suggesting--perhaps I should say "advocating"--that one new direction for educational psychology is the development of a "middle group" of professionals who are concerned with "knowledge utilization;" they are identified as a middle group because they provide a bridge between researchers/theorists concerned with new knowledge production and the applied educational psychologists who primarily provide services to students and/or to school personnel. In the identification of roles, functions, and contributions of this middle group, some educational psychologists could appropriately function as "architects."

I've already outlined in greater detail the rationale for this "new direction" in my 1974 book on learning theories and their relevance for education. Those views were based on an extensive review of relationships between psychology and education during the twentieth century, plus my review of information about how seicntific information is "applied" in various other areas. The May, 1975, draft of the NIE Databook on Educational Research and Development in the United States included this observation: "Recognition that educational KPU knowledge production and utilization requires skills and commitments that differ from disciplinary research, together with the willingness of educational researchers and developers to learn new skills and accept new commitments, may represent the most important progress that the field has achieved in the past quarter century (p. $1^{A}/^{N}2$)." But contrary to the somewhat optimistic theme in this quotation, many problems must be faced and resolved if we are to make any real continuing progress in this new direction for educational psychology !

Issues, Problems, and Progress

(Figure 1 about here)

Let's briefly consider the general circumstances when we wish to make practical use of research information--no matter whether we're dealing with a

"basic" or an "applied" study. Figure 1 sketches an illustrative range of information that might be useful in a practical situation. As you can see, psychology is only one of many sources from which educators can derive ideas. Moreover, as we move toward any particular study, there is a common tendency to specialize--a matter that often is overlooked when practical implications are suggested. I've indicated that researchers not only specialize in some single major category within psychology, but that more and more specialization takes place as specific hypotheses, methods, and research subjects are selected.

Guetzkow (1959) noted: "The intellectual task of the social science researcher is different from the requirements imposed when the basic fund of knowledge is to be used in concrete social situations (p. 80)." That the problem is not unique to education nor to psychology is emphasized by Milsum's 1966 comment "When the biologist, social scientist, and indeed natural scientist collaborate with the engineer on these large new systems' problems, their classical roles as analyzers of existing systems in contrast to the engineer's role as the synthesizer of previously nonexisting 'hardware' systems need reappraisal (p. vii, italics added)."

It would be both naive and unfortunate if I were to tell you that no progress has been made in this "new direction" involving "knowledge utilization" in educational psychology! But there are some quite serious problems and issues that must be faced if progress is to continue. Perhaps I should remind you of my earlier comments that educational psychology derives strength from diversity, and that some but not all should be encouraged to pursue the particular "new direction" that I'm describing.

Time will permit me merely to list some of the issues and problems and to comment about current progress. There is no "correct" sequence in which they might be noted.

1. Knowledge Production ≠ Knowledge Utilization. I've already discussed this, but it's so important that I'll quickly note it once more. We do need sound means for gaining new knowledge. But application will not automatically follow. Moreover, despite some overlap, there are substantial differences in the problems, procedures and techniques of knowledge production vs. knowledge utilization. These differences are not adequately recognized nor understood by governmental agencies and educational psychology leaders--possibly because of their extensive training and experience in knowledge production and their comparatively limited exposure to "real-world practical problems."

2. Low Prestige for Knowledge Utilization. Knowledge utilization is not regarded as a high prestige pursuit in educational psychology today. There is some not-always-subtle undertone that persons concerned with practical problems may be incapable of conducting sound research studies. Empirical research and scholarly publications traditionally have been used as abases for selecting leaders even when particular positions presumably would require intimate understanding of practical issues. A young educational psychologist who becomes involved with practical matters may lose credibility as a researcher and producer of new knowledge. Many of the battle waged within APA have centered around "relevance" of psychology information for practical situations, typically resulting in a stand-off or draw between researchers and practitioners, with few successful attempts to relate the two groups and their respective, legitimate concerns.

In this controversy between researchers and practitioners there is low sensitivity to the possibility that we need "middle" professionals. Currently, one is almost forced to take sides between "knowledge producers" and "service delivery" educational psychologists. Knowledge producers have power and prestige within

academic communities, and service delivery psychologists command good salaries and respect among their clients. Comparatively little attention or prestige is given to educational psychologists concerned with knowledge utilization except when they identify with one of these two better established groups.

3. Clarity Concerning KP vs. KU Roles and Functions. Until comparatively recently, there has been confusion concerning roles and functions of persons involved with knowledge utilization vs. knowledge production. For example, early twentieth century educational psychologists had few guidelines for formulating research questions, planning methods, collecting data, and interpreting their findings. Today, we can proudly point to a wide range of sophisticated techniques that are available and we can identify the roles and functions of research specialists. In contrast, knowledge utilization today typically occurs on a intuitive, improvised basis even though there now is emerging greater clarity concerning roles and functions of educational psychologists in this area. Thus, many psychologists and educators have made "pronouncements" about the practical implications of their research findings for a wide variety of practical situations despite the narrow, specialized context in which their (applied as well as basic) studies were conducted.

There has been progress in recent years in clarifying roles and functions with regard to knowledge utilization. Based on my own direct experiences and literature reviews, I feel comfortable in identifying four major aspects--design, development, dissemination, and evaluation--with the qualifying comment that these processes are both seperately identifiable but continually interactive in practice. There now exist some formalized procedures and techniques in each of these areas; but by no means are they as clearly identified nor as sophisticated in character as knowledge production processes nor as they should

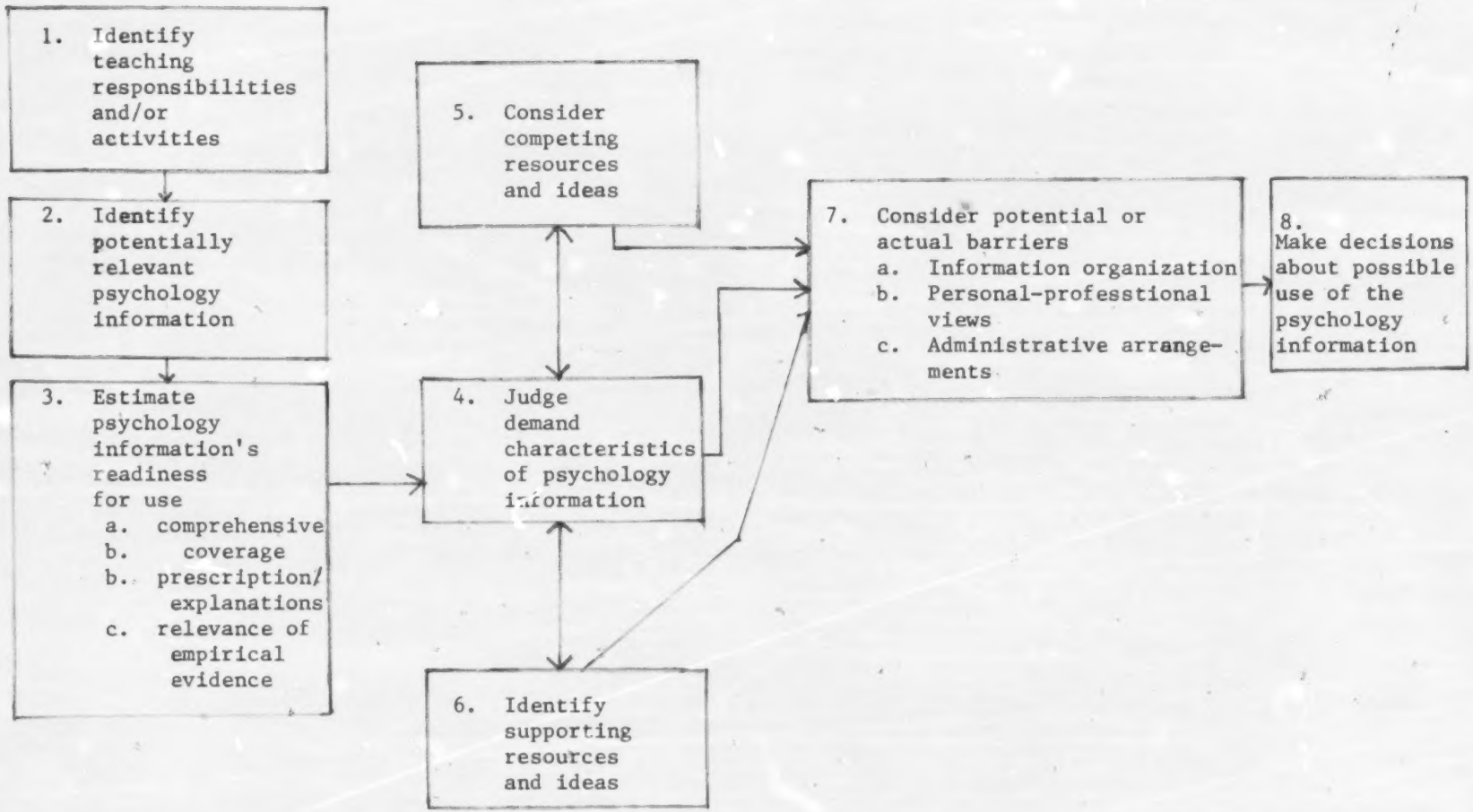
be for the educational psychologist interested in knowledge utilization.

4. Information ≠ Information ≠ Information. In addition to the "low prestige" issue there is another complex problem faced by anyone who wishes to use educational psychology information--the information almost always is organized and classified for other researchers; rather than for users. Again referring back to the Figure 1 I used earlier, I'm suggesting that research findings and theories almost always are organized around the disciplinary theoretical issue or hypothesis rather than around some identifiable practical problem.

Partly stemming from this type of organization, several other problems and issues can be identified. I can quickly depict the problem by saying that we have not aided potential users in making judgments about "readiness for use" nor about "demand characteristics" of potentially relevant educational psychology information. Using consumer-ready products with which we have some familiarity, I'll use an analogy to show that we inappropriately act as though scientific information is essentially uniform in character.

We commonly recognize that manufacturers today do not customarily take raw materials and produece "consumer ready" products. Instead, for example, some companies take raw materials and produce sheets of metal. These sheets are bought by another manufacturer who modifies them and produces some component. That component might be further bought, processed, and sold several times before a product is ready for sale to an ultimate consumer. At times, ultimate consumers actually buy products which otherwise would have been sold to manufacturers: Stores which sell transitors, diodes, and other electronic parts and audio components constitute examples in which "ultimate consumers" buy products which more frequently are sold to manufacturers. Advertisements of certain corporations emphasize the fact that we buy their products without knowing it because

Figure II-2 Guidelines for Use of Psychology Information


1. Identify teaching responsibilities and/or activities
2. Identify potentially relevant psychology information
3. Estimate psychology information's readiness for use
a. comprehensive
b. coverage
b. prescription/ explanations
c. relevance of empirical evidence
4. Judge demand characteristics of psychology information
5. Consider competing resources and ideas
6. Identify supporting resources and ideas
7. Consider potential or actual barriers
a. Information organization
b. Personal-professtional views
c. Administrative arrangements
8. Make decisions about possible use of the psychology information

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they are somewhere in the middle of the chains which produce consumer-ready products.

Unfortunately, we have not devised and popularized means for classifying "information" in terms of its readiness for use. Consequently, both researchers and the general public are frustrated in coping with the many situations where research information is not ready for "ultimate consumer" use but which will aid other researchers and developers in producing consumer-ready products, techniques, ideas, etc. Similarily, other problems commonly arise because we have not devised means for describing the "demand characteristics" or compelling qualities of information that we provide from research for possible practical use.

5. Representation and Modification of Tentative "Solutions". Architects and other design specialists have devised systematic means for representing their tentative ideas in a form that even major modifications can be accomplished with minimal effort and cost. For example, an architect can rapidly determine whether a preliminary sketch of a building is compatible with the client's needs and preferences; radical changes in the overall design can be accomplished very early in the process before major costs have been incurred. Later, as detailed blueprints and specifications are prepared, again major changes can be made at a cost that is substantially lower than if one were to wait until the building were already constructed before requesting such changes. Moreover, throughout these representation and modification processes, the architect constantly must keep in mind the desires and constraints of his client as well as the research and other practical information that can assure successful completion of the project.

I find it convenient to say that design processes involve "variance manipulation" rather than "variable manipulation". Taking the latter first, in the typical psychology study, the investigator selects and manipulates particular variables and assesses the effects on subjects. In contrast, the design specialist starts with the tolerable outcomes--which could be described as desired means and variances for important outcome measures--and must find some "mix" of conditions that can produce the desired outcomes.

Both the architect and the educational psychologist are expected to create or to find means for producing some desired outcome. And in the least costly fashion they typically confer with their client to evaluate and to modify their tentative "solutions." In the February, 1977, APA Monitor, Aaron Wildavsky (new president-designate of the Russell Sage Foundation) is quoted as describing policy analysis as "an art from in which the problems must be tentatively be solved before they can be understood (p. 11)." I believe that the same can be said about knowledge utilization more generally; We need means for representing tentative solutions even as we determine "if" and "how" they "work".

Some Advantages of This "New Direction"

(Figure 2 about here)

I do not pretend to have indicated all issues that are relevant to knowledge utilization, nor to have identified fool-proof solutions for current problems. Through the briefly described examples I've listed, I've tried to indicate ways in which some aspects of architects' views and procedures are worth considering as one "new direction" for educational psychologists to take. Figure 2 summarizes and suggests one way we might organize matters I've discussed.

I'll list here some illustrative gains which could result for individual educational psychologists and for our field in toto if we successfully pursue this emerging direction for educational psychology.

1) More systematic design stratagies--including some discussed earlier in this Symposium--can improve the quality and appropriateness of educational innovations.
2) Design constraints can include stipulations that resulting educational experiences can be both "humanistic" and consistent with sound research findings.
3) Outcomes can be broadly conceived and need not be limited to easily measured results.
4) Priorities can be set for qualtiy of the educational experience as well as for personal relevance of measurable results.
5) This kind of orientation will encourage--perhaps even "force"-- us to explore ways in which information flows among designers and practioners as well as among researchers.
6) By formalizing architect-design roles and functions, both researchers and practioners will gain assistance in communication--thus enabling them to focus more intently on their respective major concerns of producing new knowledge and providing services.
7) As we understand better how to reorganize and to reclassify information, teachers and other school personnel can become better informed and discriminating "consumers" of educational psychology information.
8) Because many sectors of society currently are concerned with similar knowledge utilization problems, educational psychologists may find new positions as architect-design specialists wherever research information is considered in solving society's problems.